New Priorities for the 21st Century

NOAA's Strategic Plan

Updated for FY2005 - FY2010

U.S. DEPARTMENT OF COMMERCE ~ NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

United States Department of Commerce

National Oceanic and Atmospheric Administration

New Priorities for the 21st Century

NOAA Strategic Plan

FY 2005 – FY 2010

September 2004

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Table of Contents

NOAA's responsibilities for the environment, ecosystems, safety, and commerce of this Nation span oceanic, coastal, and atmospheric domains.

Every day, the work we do touches the life of America and much of the world. NOAA provides weather, water, and climate services, manages and protects fisheries and sensitive marine ecosystems, conducts atmospheric, climate, and ecosystems research, promotes efficient and environmentally safe commerce and transportation, supports emergency response, and provides vital information in support of homeland security. The breadth and scope of these services demand that we be responsive to both short-term and long-term societal needs. The Nation and world depend upon the skill, efficiency, and productivity of our workforce and its ability to provide the foundation for this information and these services.

No successful, societal response to environmental or ecological stress, however, has ever been accomplished by a single agency or organization. Success requires the interaction, cooperation, and feedback that come only if all parties involved work together to achieve these goals. We depend strongly on our partners at local, state, national, and international levels to acquire, develop, and distribute vital information, conduct essential research, and provide services needed by society. We must work with international institutions, state and federal agencies, tribes, local and regional governments, non-governmental organizations, educational institutions, and private businesses in all we do, not only to succeed in providing information, products, and services, but also to ensure agency, national, and international goals are achieved. This Plan focuses on NOAA's role and mission to assure a reliable federal foundation for our cooperative efforts, but NOAA is also committed to nurturing the effective development of this complex and diverse enterprise to serve the public interest.

The NOAA Strategic Plan is an important link between budget and performance. It is a critical tool to help steer us in the best direction for the future and to help us design and create programs, allocate resources, and perform with better accountability for results. It is through this Plan that we move forward to achieve our goals and serve society in the best possible way.

Letter from the NOAA Administrator

Conrad C. Lautenbacher, Jr.
Vice Admiral, U.S. Navy (Ret.)

Under Secretary of Commerce
for Oceans and Atmosphere

United States
Department of Commerce
Washington, D.C.

New Priorities for the 21st Century

NOAA Strategic Plan FY 2005 – FY 2010

A Better World Through Ecological & Environmental Knowledge & Stewardship

Vision

An informed society that uses a comprehensive understanding of the role of the oceans, coasts, and atmosphere in the global ecosystem to make the best social and economic decisions

Mission

To understand and predict changes in the Earth's environment and conserve and manage coastal and marine resources to meet our Nation's economic, social, and environmental needs

Core Values

People
Integrity
Excellence
Teamwork
Ingenuity

Science
Service
Stewardship

INTRODUCTION

This Strategic Plan establishes the goals for NOAA and the approaches we take to ensure accountability for results. The Plan guides our management decisions and provides a consistent framework for Line Office and Staff Office and cross-organizational plans, initiatives, and performance measures. As a federal government agency within the U.S. Department of Commerce (DOC), we are strengthening management by carrying out the President's Management Agenda to manage human capital strategically, integrate budget and performance management, improve financial performance, expand electronic government, and seek competitive sourcing where possible. We aim to create more efficient program operations so we can continue to improve customer service and use taxpayer funds more effectively.

NOAA GOALS

Based on stakeholder input and internal assessments of our mandates and mission, we have adopted a structure of four Mission Goals and a Mission Support Goal around which all of our work is planned and organized. NOAA's Line and Staff Offices execute activities required to achieve these goals through NOAA programs. These programs may involve the activities of more than one Line or Staff Office.

- *Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management*
- *Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond*
- *Serve Society's Needs for Weather and Water Information*
- *Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation*
- *Provide Critical Support for NOAA's Mission*

The domains of the four Mission Goals are interrelated, sharing common science and technology challenges and stakeholder interest to some degree. For example, an ecosystems approach to management requires information on weather and climate, and must take into consideration commerce and transportation interests. Each Mission Goal must consider its relationship with the others in developing and implementing plans and programs. Similarly, the Mission Support Goal provides vital NOAA-wide services in support of all Mission Goals.

For each goal, we present a *background description* of its strategic context and a list of its high-level *outcomes* and *performance objectives*. The outcomes describe the intended purpose of all efforts related to that goal. The performance objectives describe the value or characteristic that will be used to evaluate the actual achievement of the outcomes. The performance objectives are supported directly by NOAA's performance measures, some of which are tabulated in Appendix A. We then provide *strategies* describing the actions we will take to accomplish the performance objectives and achieve the outcomes. Collectively, these strategies address an end-to-end process that covers the following five fundamental *activities:*

- *Monitor and observe the land, sea, atmosphere, and space to create an observational and data collection network that tracks Earth's changing systems;*
- *Understand and describe how natural systems work together through investigation and interpretation of information;*
- *Assess and predict the changes of natural systems and provide information about the future;*
- *Engage, advise, and inform individuals, partners, communities, and industries to facilitate information flow, assure coordination and cooperation, and provide assistance in the use, evaluation, and application of information; and*
- *Manage coastal and ocean resources to optimize benefits to the environment, the economy, and public safety.*

When we organize our strategies along these activities, we ensure high-quality data are competently analyzed, evaluated, and provided to people and communities who need and use our information, products, and services.

Protect, Restore, and Manage the Use of Coastal and Ocean Resources Through an Ecosystem Approach to Management

Coastal areas are among the most developed in the Nation. More than half the population lives on less than one-fifth of the land in the contiguous United States. Coastal counties, including those along the Great Lakes, are growing three times faster than counties elsewhere, adding more than 3,600 people a day to their populations. Coastal and marine waters support over 28 million jobs and provide a tourism destination for 180 million Americans a year. The value of the ocean economy to the United States is over $115 billion. The amount added annually to the national economy by the commercial and recreational fishing industry alone is over $48 billion, with an additional $6 billion in direct and indirect economic impacts from aquaculture. With its Exclusive Economic Zone of 3.4 million square miles, the United States manages the largest marine territory of any nation in the world.

NOAA has a unique mandate from Congress to be a lead federal agency in protecting, managing, and restoring these marine resources. To meet this mandate, our scientists, specialists, and external partners contribute world-class expertise in oceanography, marine ecology, marine archeology, fisheries management, conservation biology, natural resource management, and risk assessment. To achieve balance among ecological, environmental, and social influences, we have adopted an *ecosystem approach to management*. We recognize the transition to an ecosystem approach must be incremental and collaborative. In pursuing this approach, we strive to integrate the concerns, priorities, and expertise of all citizens and sectors in the management of coastal and marine resources.

NOAA's goal to conserve, protect, manage, and restore living marine resources and coastal and ocean resources is critical to the health of the U.S. economy. Increased public knowledge of ecosystems and the principles of sustainable development, and the active involvement of the public as stewards for coastal and marine ecosystem issues in their communities, are critical components of this mission. Developed countries such as the United States have a responsibility for stewardship of the marine ecosystem and for setting standards to protect and manage the shared resources and harvests of the oceans. Believing that it is possible to balance sustainable economic development and healthy functioning marine ecosystems, we seek to provide an example for the rest of the world in comprehensively managing resources of the world's oceans and coasts.

NOAA's Ecosystem Approach to Management

An **ecosystem** is a geographically specified system of organisms, the environment, and the processes that control its dynamics. Humans are an integral part of an ecosystem.

The **environment** is the biological, chemical, physical, and social conditions that surround organisms.

An **ecosystem approach to management** is management that is adaptive, specified geographically, takes into account ecosystem knowledge and uncertainties, considers multiple external influences, and strives to balance diverse social objectives.

ECOSYSTEMS MISSION GOAL

Outcomes	Performance Objectves
• Healthy and productive coastal and marine ecosystems that benefit society.	• Increase number of fish stocks managed at sustainable levels.
• A well-informed public that acts as a steward of coastal and marine ecosystems.	• Increase number of protected species that reach stable or increasing population levels.
	• Increase number of regional coastal and marine ecosystems delineated with approved indicators of ecological health and socioeconomic benefits that are monitored and understood.
	• Increase number of invasive species populations eradicated, contained, or mitigated.
	• Increase number of habitat acres conserved or restored.
	• Increase portion of population that is knowledgeable of and acting as stewards for coastal and marine ecosystem issues.
	• Increase number of coastal communities incorporating ecosystem and sustainable development principles into planning and management.

ECOSYSTEM STRATEGIES

- Engage and collaborate with our partners to achieve regional objectives by delineating regional ecosystems, forming regional ecosystem councils, and implementing cooperative strategies to improve regional ecosystem health.
- Manage uses of ecosystems by applying scientifically sound observations, assessments, and research findings to ensure the sustainable use of resources and to balance competing uses of coastal and marine ecosystems.
- Improve resource management by advancing our understanding of ecosystems through better simulation and predictive models. Build and advance the capabilities of an ecological component of the NOAA global environmental observing system to monitor, assess, and predict national and regional ecosystem health, as well as to gather information consistent with established social and economic indicators.
- Develop coordinated regional and national outreach and education efforts to improve public understanding and involvement in stewardship of coastal and marine ecosystems.
- Engage in technological and scientific exchange with our domestic and international partners to protect, restore, and manage marine resources within and beyond the Nation's borders.

Understand Climate Variability and Change to Enhance Society's Ability to Plan and Respond

Climate shapes the environment, natural resources, economies, and social systems that people depend upon worldwide. While humanity has learned to contend with some aspects of climate's natural variability, major climatic events, combined with the stresses of population growth, economic growth, and land-use practices, can impose serious consequences on society. The 1997–98 El Niño, for example, had a $25 billion impact on the U.S. economy—property losses were $2.6 billion and crop losses approached $2 billion. Long-term drought leads to increased and competing demands for fresh water with related effects on terrestrial and marine ecosystems, agricultural productivity, and even the spread of infectious diseases. Decisions about mitigating climate change also can alter economic and social structures on a global scale. We can deliver reliable climate information in useful ways to help minimize risks and maximize opportunities for decisions in agriculture, public policy, natural resources, water and energy use, and public health. We continue to move toward developing a seamless suite of weather and climate products. Whereas the Weather and Water Goal aims to expand predictive capacity out to two weeks, the Climate Goal addresses predictions on time scales of up to decades or longer.

In 2003, the U.S. Government formed the Climate Change Science Program (CCSP) to facilitate the creation and application of knowledge of Earth's global environment through research, observations, decision support, and communication. The DOC, partnering with 12 other federal agencies, leads this nationwide effort (*http://www.climatescience.gov/Library/stratplan2003/default.htm*). At NOAA, climate performance objectives are virtually identical to CCSP goals and are managed by the Climate Office, which assures consistency among DOC, NOAA, and CCSP strategic goals.

NOAA's climate information, products, and services enable society to understand and respond to changing climate conditions. Together with our partners, we will accelerate the development of information to support climate policy decisions and plans that consider both climate variability and long-term climate change. We will direct our efforts and actions toward delivering trusted, timely information services to those who need and can use them.

CLIMATE MISSION GOAL

Outcomes	Performance Objectives
• A predictive understanding of the global climate system on time scales of weeks to decades with quantified uncertainties sufficient for making informed and reasoned decisions. • Climate-sensitive sectors and the climate-literate public effectively incorporating NOAA's climate products into their plans and decisions.	• Describe and understand the state of the climate system through integrated observations, analysis, and data stewardship. • Improve climate predictive capability from weeks to decades, with an increased range of applicability for management and policy decisions. • Reduce uncertainty in climate projections through timely information on the forcing and feedbacks contributing to changes in the Earth's climate. • Understand and predict the consequences of climate variability and change on marine ecosystems. • Increase number and use of climate products and services to enhance public and private sector decision making.

CLIMATE STRATEGIES

- Improve the quality and quantity of climate observations, analyses, interpretation, and archiving by maintaining a consistent climate record and by improving our ability to determine why changes are taking place.
- Improve the quantification and understanding of the forces bringing about climate change by examining relevant human-induced increases in atmospheric constituents.
- Advance sub-seasonal to inter-annual climate predictions and climate change projections by improving analysis of the climate system, using ensembles of multiple, high-end climate and Earth models.
- Develop the ability to predict the consequences of climate change on ecosystems by monitoring changes in coastal and marine ecosystems, conducting research on climate-ecosystem linkages, and incorporating climate information into physical-biological models.
- Develop and contribute to routine state-of-the-science assessments of the climate system for informed decision making.
- Work with customers in order to deliver climate services and information products involved in health, safety, environmental, economic, and community planning that increase the effective application of this information.
- Coordinate among NOAA Line Offices the transition from investigator-driven research projects to operational facilities, capabilities, and products.
- Support educational efforts to create a more climate-literate public by developing climate educational materials, involving teachers in the research process, and generating tools to allow climate information to be used in decision making.

Serve Society's Needs for Weather and Water Information

Floods, droughts, hurricanes, tornadoes, tsunamis, and other severe weather events cause $11 billion in damages each year in the United States. Weather is directly linked to public safety, and nearly one-third of the U.S. economy (~ $3 trillion) is sensitive to weather and climate. With so much at stake, NOAA's role in understanding, observing, forecasting, and warning of environmental events is expanding. With our partners, we seek to provide decision makers with key observations, analyses, predictions, and warnings for a range of weather and water conditions, including those related to water supply, air quality, and space weather. Businesses are getting more sophisticated about how to use this weather and water information to improve operational efficiencies, to manage environmental resources, and to create a better quality of life.

NOAA is strategically positioned to conduct sound, scientific research and provide integrated observations, predictions, and advice for decision makers who manage environmental resources, ranging from fresh water supplies to coastal ecosystems to air quality. Realizing our information and services bridge both weather and climate timescales, we will continue to collect and analyze environmental data and issue forecasts and warnings that help protect life and property, and enhance the U.S. economy. We recognize future needs can be met even better by exploring new concepts and applications, and we will invest in robust weather and water research.

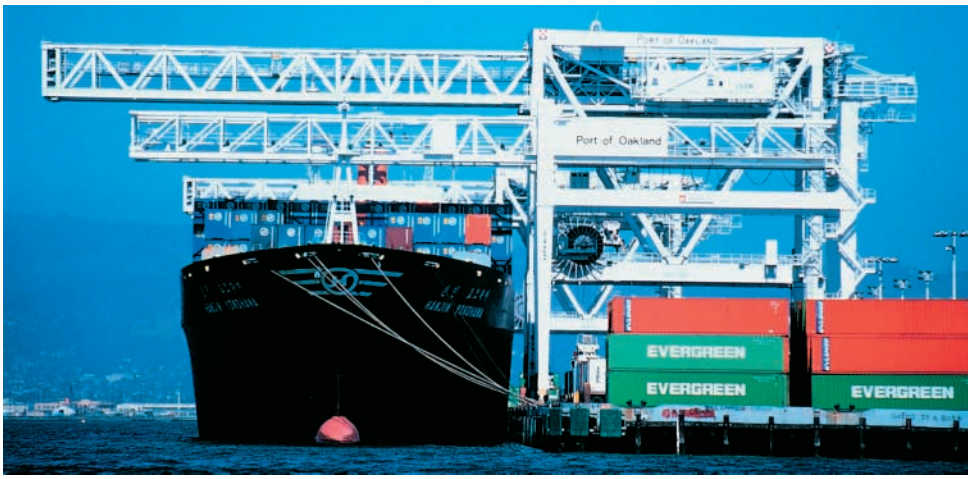
We are committed to excellent customer service. To that end, we depend on the U.S. *weather enterprise,* including our partners in the private sector, academia, and government, who add value to our information and services, and who help disseminate critical environmental information. We will work more closely with existing partners and will develop new partnerships so the public understands and is satisfied with our information. Together, we will expand services to support evolving national needs, including those associated with space weather, freshwater and coastal ecosystems, and air quality prediction.

WEATHER AND WATER MISSION GOAL

Outcomes	Performance Objectives
• Reduced loss of life, injury, and damage to the economy. • Better, quicker, and more valuable weather and water information to support improved decisions. • Increased customer satisfaction with weather and water information and services.	• Increase lead time and accuracy for weather and water warnings and forecasts. • Improve predictability of the onset, duration, and impact of hazardous and severe weather and water events. • Increase application and accessibility of weather and water information as the foundation for creating and leveraging public (i.e., federal, state, local, tribal), private and academic partnerships. • Increase development, application, and transition of advanced science and technology to operations and services. • Increase coordination of weather and water information and services with integration of local, regional, and global observation systems. • Reduce uncertainty associated with weather and water decision tools and assessments. • Enhance environmental literacy and improve understanding, value, and use of weather and water information and services.

WEATHER AND WATER STRATEGIES

- Improve the reliability, lead-time, and effectiveness of weather and water information and services that predict changes in environmental conditions.
- Integrate an information enterprise that incorporates all stages from research to delivery, seeks better coordination of employee skills and training, and engages customers.
- Develop and infuse research results and new technologies more efficiently to improve products and services, streamline dissemination, and communicate vital information more effectively.
- Work with private industry, universities, and national and international agencies to create and leverage partnerships that foster more effective information services.
- Build a broad-based and coordinated education and outreach program by engaging individuals in continuous learning toward a greater understanding of the impacts of weather and water on their lives.
- Employ scientific and emerging technological capabilities to advance decision-support services and educate stakeholders.



Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation

Safe and efficient transportation systems are crucial to the U.S. economy. The U.S. marine transportation system ships over 95 percent of the tonnage and more than 20 percent by value of foreign trade through U.S. ports, including 48 percent of the oil needed to meet America's energy demands. At least $4 billion is lost annually due to economic inefficiencies resulting from weather-related air-traffic delays. Improved surface weather forecasts and specific user warnings would reduce the 7,000 weather-related fatalities and 800,000 injuries that occur annually from crashes on roads and highways. The injuries, loss of life, and property damage from weather-related crashes cost an average of $42 billion annually.

We provide information, services, and products for transportation safety and for increased commerce on roads, rails, and waterways. We will improve the accuracy of our information for marine, aviation, and surface weather forecasts, the availability of accurate and advanced electronic navigational charts, and the delivery of real-time oceanographic information. We seek to provide consistent, accurate, and timely positioning information that is critical for air, sea, and surface transportation. We will respond to hazardous material spills and provide search and rescue routinely to save lives and money, and to protect the coastal environment. We will work with port and coastal communities and with federal and state partners to ensure port operations and development proceed efficiently and in an environmentally sound manner. We will work with the Federal Aviation Administration and the private sector to reduce the negative impacts of weather on aviation without compromising safety. Owing to increased interest by the public and private sectors, we also will expand weather information for marine and surface transportation to enhance safety and efficiency.

COMMERCE AND TRANSPORTATION MISSION GOAL

Outcomes	Performance Objectives
• Safe, secure, efficient, and seamless movement of goods and people in the U.S. transportation system. • Environmentally sound development and use of the U.S. transportation system.	• Enhance navigational safety and efficiency by improving information products and services. • Realize national economic, safety, and environmental benefits of improved, accurate positioning capabilities. • Reduce weather-related transportation crashes and delays. • Reduce human risk, environmental, and economic consequences resulting from natural or human-induced emergencies. • Increase total government procurements from NOAA-licensed commercial firms operating remote sensing systems.

COMMERCE AND TRANSPORTATION STRATEGIES

- Expand and enhance advanced technology monitoring and observing systems, such as weather and oceanographic observations, ice forecasts and nowcasts, hydrographic surveys, and precise positioning coordinates, to provide accurate, up-to-date information.
- Develop and apply new technologies, methods, and models to increase the capabilities, efficiencies, and accuracy of transportation-related products and services.
- Develop and implement sophisticated assessment and prediction techniques, products, and services to support decisions on aviation, marine, and surface navigation efficiencies; coastal resource management; and transportation system management, operations, and planning.
- Build public understanding of the science and technology involved and the role of the environment in commerce and transportation through outreach, education, and industry collaboration.

Provide Critical Support for NOAA's Mission

Strong, effective, and efficient support activities are necessary for us to achieve our Mission Goals. Our facilities, ships, aircraft, environmental satellites, data-processing systems, computing and communication systems, financial and administrative offices, and our approach to management provide the foundation of support for all of our programs. This critical foundation must adapt to evolving mission needs and, therefore, is an integral part of our strategic planning. It also must support U.S. homeland security by providing NOAA services, such as civil alert relays through NOAA Weather Radio and air dispersion forecasts, in response to national emergencies.

NOAA ships, aircraft, and environmental satellites are the backbone of the global Earth observing system and provide many critical mission support services. To keep this capability strong and current with our Mission Goals, we will ensure NOAA has adequate access to safe and efficient ships and aircraft through the use of both NOAA platforms and those of other agency, academic, and commercial partners. We will work with academia and partners in the public and private sectors to ensure future satellite systems are designed, developed, and operated with the latest technology. In addition, safe and adequate facilities and state-of-the-art information technology are essential to the improvement of NOAA's operations and service delivery. NOAA's long-range facility planning and comprehensive maintenance planning are underway with the goal to ensure right-sized, cost-effective, and safe facilities.

To achieve our Mission Goals, we must also commit to organizational excellence through management and leadership across a "corporate" NOAA. We will provide effective administrative, financial, and information technology services that enable us to deliver effective products and services. We will continue to improve the policy, programmatic, and managerial functions that support our Mission Goals. Our administrative and finance programs will ensure effective communication inside and outside NOAA, and efficient management of our assets, business processes, and financial resources.

MISSION SUPPORT

Outcomes	Performance Objectives
• A safe operating environment with efficient and effective financial, administrative, and support services.	• Increase number of facilities with improved co-location of NOAA services and partners.
• Ship, aircraft, and satellite programs that ensure continuous observation of critical environmental conditions.	• Improve safety and other condition indices for facilities and platforms.
• NOAA Homeland Security-related capabilities that are fully integrated into national planning and available at all times.	• Enhance applicability of NOAA services to Homeland Security efforts.
• A sustainable and strategic facilities master planning process with a 5- to 10-year planning horizon.	• Improve efficiency and performance in the processing of financial and administrative transactions and services.
• Secure, reliable, and robust information flows within NOAA and out to the public.	• Increase number of ship operating days and aircraft flight hours that meet NOAA's data collection requirements with high customer satisfaction.
	• Increase quantity, quality, and accuracy of satellite data that are processed and distributed within targeted time.
	• Increase internal and external availability, reliability, security, and use of NOAA information technology and services.

MISSION SUPPORT STRATEGIES

- Provide timely and effective acquisition and delivery of satellite-derived information that supports requirements from the Mission Goals.
- Provide applied research to ensure the quality, reliability, and accuracy of current and future satellite products and services to support the Mission Goals.
- Use effective and efficient approaches to meet NOAA requirements for ship and aircraft support.
- Provide timely and accurate policy, guidance, and information on safety issues affecting NOAA, its customers, and its contractors.
- Formulate and maintain policies, procedures, plans, and processes, including inspections and training, to safely collect data using ships, boats, aircraft, and divers.
- Coordinate NOAA's homeland security-related plans, programs, and policies to enhance NOAA-wide program response, risk management, continuity of operations, and other contingency planning, and program infrastructure.
- Plan for, construct, and maintain facilities, including co-locating facilities among NOAA entities and external partners to allow for consolidation of services.
- Lead agency-wide efforts in education and outreach, public affairs, legislative affairs, international affairs, and legal affairs.
- Develop and maintain an Information Technology Enterprise that does the following: fully supports the life cycle of NOAA's programs; is secure, reliable, and cost-effective; encourages information sharing; and complies with all applicable policies.
- Implement a strategic approach that attracts and maintains a competent and diverse workforce and creates an environment that develops, encourages, and sustains employees as the work to accomplish NOAA's strategic goals.
- Adopt a functional management model to deliver administrative and financial services that will establish direct lines of accountability from headquarters business line managers to all NOAA financial and administrative staff located in the field.
- Employ a planning, programming, budgeting, and execution system to enhance NOAA's capabilities and to guarantee effective delivery of needed products and services.
- Improve the efficiency, accountability, and transparency of administrative programs and services through process optimization and customer satisfaction assessment.

CROSSCUTTING PRIORITIES

In meetings with NOAA's stakeholders and employees to identify strategic directions for the next decade, both groups emphasized that we must make our core priorities more relevant and effective to support our goals. As a result, we have selected five essential activities where corporate policy and guidance can assure our goals coordinate in important areas. Each of these crosscutting priorities is guided by a NOAA council, which is responsible for developing agency-wide policies and procedures in that area.

- *Developing, Valuing, and Sustaining a World-Class Workforce*
- *Integrating Global Environmental Observations and Data Management*
- *Ensuring Sound, State-of-the-Art Research*
- *Promoting Environmental Literacy*
- *Exercising International Leadership*

These crosscutting priorities describe the thematic underpinnings that enable the success of NOAA's Mission, ensure effective operations, and promote creativity throughout the organization.

Developing, Valuing, and Sustaining a World-Class Workforce

People are our most critical asset. Accomplishing NOAA's challenging goals requires an inclusive, diverse, highly skilled, motivated, and effective workforce that reflects the communities we serve. We must develop and maintain a culture that empowers people by encouraging creativity, initiative, risk-taking, and open debate. As society evolves, it is imperative we at NOAA continue to have the scientific, technical, and administrative expertise necessary to maintain our leadership. We must anticipate the skills and talents NOAA will need and, through recruitment, training, and continuing education, ensure our employees have those skills. We must keep and promote expertise in skills that support collaboration, communication, and partnerships. Recruiting, retaining, and training this workforce requires a corporate commitment to build the necessary culture and infrastructure, and a willingness to create a workplace that rewards teamwork and cooperation. To this end, we will implement a strategic approach that attracts and maintains a competent and diverse workforce, creates an environment that develops, encourages, and sustains employees as they work to accomplish NOAA's strategic goals, and is anchored by a robust Learning Management System aligned with NOAA's Mission Goals (*http://www.rdc.noaa.gov/~hrmo/WFM-Strat-Plan12-31-03.pdf*).

Integrating Global Environmental Observations and Data Management

Earth Observations are intrinsic to NOAA's mission. We depend on an observing system for virtually every activity—from fundamental research and discovery, to long-range operational forecasting, to short-term warnings of immediate hazards, to day-to-day regulatory decisions. An integrated Earth observation and data management system will enable NOAA's resources to be applied more efficiently and effectively by reducing duplication, improving coverage, and providing

networks to disseminate information when and where it is needed around the world. Through our participation and leadership in national and international global data collection and reporting efforts, such as the Global Earth Observing System of Systems (GEOSS) and other important observing groups and efforts, we can further integrate NOAA's observing systems, data, and quality control with efforts of other nations to guarantee the best quality and coverage of Earth observing data.

At NOAA, we developed strategic goals for an integrated Earth observation and data management system to provide better information, products, and services to the Nation (*http://www.nosc.noaa.gov/docs/products/strategic.pdf*). This system will bring together all aspects of environmental and ecological monitoring into an integrated information enterprise to ensure the quality, efficient management, reliability, and accessibility of the data acquired. NOAA is currently a major partner in the interagency Integrated Ocean Observing System (IOOS), with its significant linkage to our Mission Goals. We will continue to work with local, national, and international partners to develop an integrated global-to-local environmental and ecological observation and data management system that will continually monitor the complex, symbiotic systems of the ocean, atmosphere, and land. This coordinating activity will maximize the mutual benefits of national and international exchange of data.

Ensuring Sound, State-of-the-Art Research

NOAA is a science-based agency with regulatory, operational, and information service responsibilities. To fulfill these responsibilities, we must direct and maintain a vigorous and forward-looking research enterprise that includes a healthy academic component. Success in achieving our vision depends upon how well we understand Earth's dynamic, natural systems and how well we assess the effects of human activities upon those systems. A strong economic and social science capability is also needed so we can analyze and understand evolving user requirements, priorities, and benefits of our information, services, and products. Long-term, visionary research will be critical to recognizing emerging issues and opportunities and for managing future environmental, ecological, and societal needs (*http://www.nrc.noaa.gov/Reports.htm*). Each year, discovery and research at NOAA contribute significantly to a more complete understanding of the complex behavior of the atmosphere and oceans. This new knowledge leads to continual improvements in predicting the weather, understanding climate behavior, projecting future climate variability and change, and applying ecological principles to environmental management.

NOAA's investments in both short- and long-term research will increase the effectiveness of existing activities while also building the foundation for tomorrow's innovative products and services. By building close working relationships and formalized transition mechanisms between the research and operational components of NOAA, we will accelerate the transfer of new technologies, research results, and observational advances into improved services and products. We will remain committed to our external partners and will leverage

their abilities to assist us in meeting our research goals and in educating the next generation of scientists. We will use external peer-review processes to help evaluate and guide our research. More generally, we will maintain a quality research enterprise that will enable us to retain and recruit the best and brightest scientists, so the agency always finds itself capable of providing the most authoritative scientific information to the public and to policy and decision makers.

Promoting Environmental Literacy

As a global leader in oceanic and atmospheric sciences, NOAA has a responsibility to improve public understanding of our planet's dynamic air and water systems and the effect those systems have on all aspects of people's lives. We work with partners in educational institutions and organizations, government agencies at all levels, and private industry to build environmental literacy. We seek to educate and inform present and future generations about the changing Earth and its processes, to inspire youth to pursue scientific and technical careers, and to improve the public's awareness, understanding, and use of NOAA products and services. We accomplish this through a multitude of activities that represent a continuum from outreach to formal and informal education (*http://www.oesd.noaa.gov/NOAA_Ed_Plan.pdf*). The result is a public better able to make informed decisions and take appropriate action on environmental and ecological matters.

Exercising International Leadership

A world with rapidly shifting political, cultural, and economic dynamics requires federal agencies involved in world affairs to cultivate fresh approaches and new services to maintain U.S. leadership. As the influence and use of Earth's oceans and atmosphere affect the economies and ecosystems of every nation, the domain of NOAA's activities naturally extends across national and continental boundaries. Whether leading worldwide collaboration in integrating global observations, guiding regional activities in managing marine and water resources, or simply collaborating in scientific endeavors, NOAA is a major player in international efforts to meet environmental and ecosystem challenges. Consequently, we recognize the value of our international partners, as we learn from their experiences and benefit by working together on common issues. Internationally, we support and promote policies and interests in ecosystem-based management, climate science, Earth observation, water management, and weather forecasting. Our strategy is to foster the active leadership of interagency and international environmental programs and policies, consistent with our agency's goals. We work to leverage multilateral and bilateral relationships to take full advantage of the development and use of research, observations, environmental science, and ecosystems management (*http://www.international.noaa.gov/FinalIASP_3-19-03.pdf*).

IMPLEMENTATION

The purpose of the NOAA Strategic Plan is to provide high-level guidance in executing our Mission. We must deliver trusted products, services, and information across a broad range of responsibilities. A NOAA Program Structure underlies and aligns our budget to the goals (Appendix B). With the 44 programs in the Program Structure, we apply an integrated system of planning, programming, budgeting, and execution to assure effectiveness, efficiency, and accurate program evaluation. Line Office Strategic Plans, completed with the NOAA Strategic Plan, assure alignment of all activities with NOAA's long-term strategic goals. Annual operating plans for programs, many of which are now matrix-managed across the NOAA Line Offices (Appendix C), are developed in conjunction with Line Office annual operating plans. Both are designed to be fully consistent with the NOAA Strategic Plan. Employee performance plans are subsequently developed in direct support of these operating plans. Each year, we produce an Annual Guidance Memorandum (*http://www.spo.noaa.gov/pdfs/FY07AGM_Final.pdf*) to guide the transformation of our plans into programs with consideration for recent developments. In this manner, we plan, manage, and report our activities responsibly and reliably to a society that depends upon us.

A Better World Through Ecological & Environmental Knowledge & Stewardship

Appendix A

Performance Management in NOAA

The NOAA Strategic Plan defines desired high-level outcomes for the future. The outcomes in this Plan stem largely from substantive meetings with NOAA employees and stakeholders. Comments and recommendations from these meetings and from public review of the draft Plan served as a basis for identifying gaps in our current programs and revising the NOAA Strategic Plan.

Performance measurement is the formal title given to the evaluation of the achievement of the outcomes and objectives. Our program managers, Line Offices, and Staff Offices are engaged in defining how we will realize the NOAA goals and are actively involved in program assessment and evaluation. The use of performance measures for assessment and evaluation is critical to NOAA's continued success.

Performance measurement is integrated into the implementation of the NOAA Strategic Plan through NOAA's Planning, Programming, Budgeting, and Execution System (PPBES). Performance measures used by Line Offices and Staff Offices, identified in their strategic plans, link explicitly to the performance objectives of the NOAA Strategic Plan and are consistent with those identified for the NOAA programs. Line Office and Program Annual Operating Plans make use of identical, specific performance measures and employee performance is linked to these. Through the PPBES, our programs, Line Offices, and Staff Offices define how they will achieve the NOAA goals. The PPBES is designed to implement a logical progression from the NOAA Strategic Plan to the NOAA Budget to execution.

NOAA's Strategic Plan and the Department of Commerce Annual Performance Plan

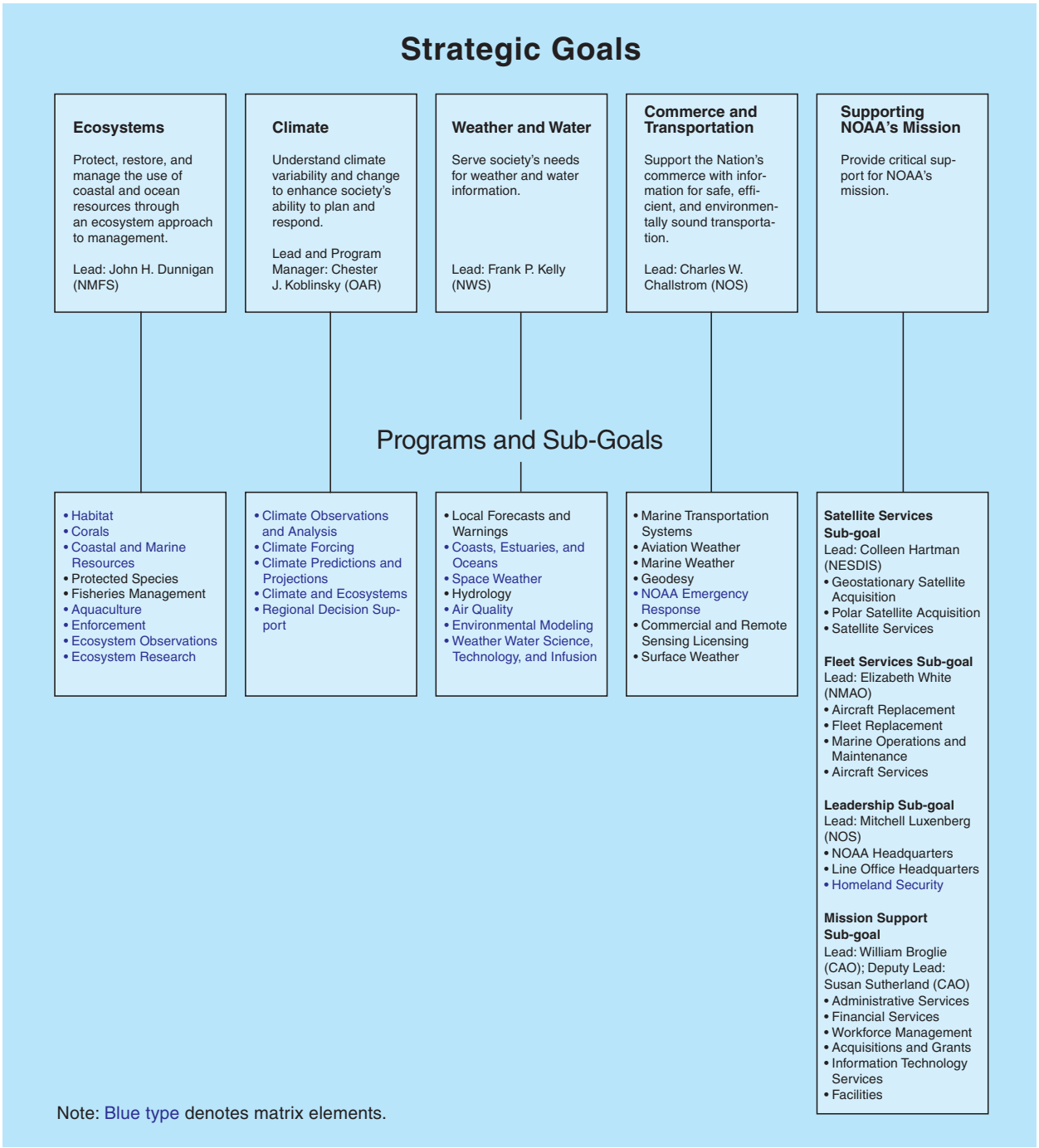
The NOAA Strategic Plan supports the Department of Commerce (DOC) Strategic Plan Goal to "Observe, protect, and manage the Earth's resources to promote environmental stewardship" and the two Objectives within the Goal, which are "Advance understanding and predict changes in the Earth's environment to meet America's economic, social, and environmental needs" and "Enhance the conservation and management of coastal and marine resources to meet America's economic, social, and environmental needs." There is a direct relationship between NOAA's goals, outcomes, and objectives and the goals and performance measures included in the annual budget submission to the DOC. The DOC uses this information for its Annual Performance Plan and Performance and Accountability Report that integrate outcomes and performance measures across the DOC.

The Government Performance and Results Act

The Government Performance and Results Act (GPRA) requires agencies to write strategic plans and annual performance plans with performance measures that show agency results over time. The table at the following web site illustrates how NOAA performance measures, including GPRA, align to these Strategic Plan goals and performance objectives: *http://www.spo.noaa.gov/pdfs/PMs for NOAA Strategic Plan.pdf.*

Appendix B

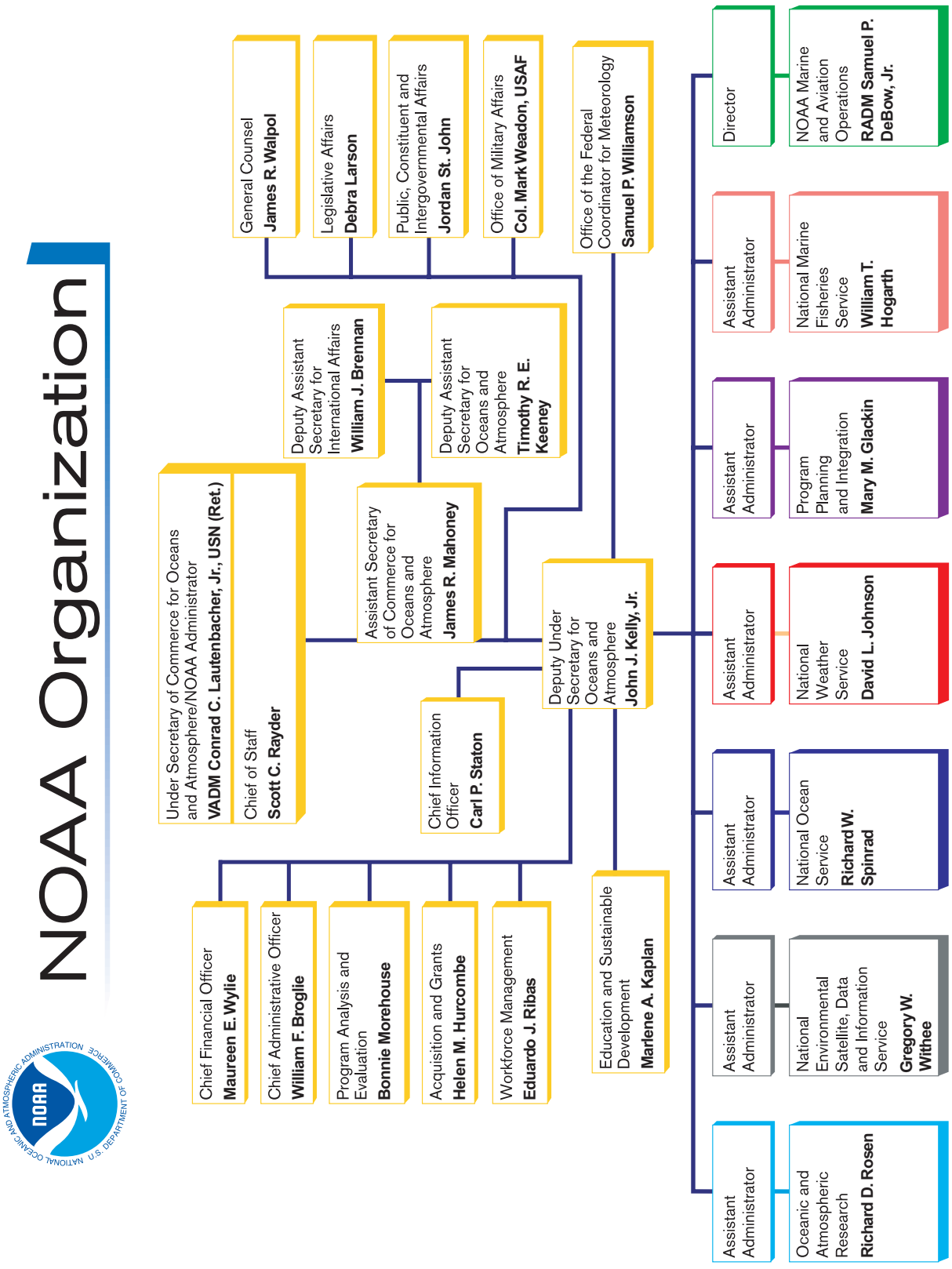
NOAA Program Structure



Note: Blue type denotes matrix elements.

Appendix C

NOAA Organization



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